

Serial Nr.: 10/620,783
Art Unit: 2873

03174-UPS

REMARKS

In the Office Action, claims 1-3, 5-8, 10-11, 13-21, 23, and 25-31 are rejected under 35 U.S.C. §102(b) as being anticipated by Lally et al., claims 4 and 9 are rejected under 35 U.S.C. §103(a) as being unpatentable over Lally et al. in view of Su et al., claim 22 is rejected under 35 U.S.C. §103(a) as being unpatentable over Lally et al., claims 12 and 24 are rejected under 35 U.S.C. §103(a) as being unpatentable over Lally et al. in view of Bawa, and claim 32 is rejected under 35 U.S.C. §103(a) as being unpatentable over Lally et al. in view of Baba et al.

The gist of this invention to provide a method for preparing a reactive tinting compound for tinted contact lens. In the method, a first compound, which is a hydrophilic compound with pendant hydroxyl and unsaturated vinyl groups, is reacted with a second compound, which is a radiation-absorbing and water soluble dye with substituted fluorochloropyrimidine or or β -sulphatoethylsulphone reactive group, to generate a product of reactive tinting compound. It should be noted that the starting material, i.e., the first compound of the instant invention is a pure short chain chemical with a very low molecular weight. As illustrated in the examples in the specification, the first compound comprises primarily hydroxyethylmethacrylate (HEMA) which has a molecular weight of only 130.

Lally et al. disclose a method of contacting a functionalized dye with a high molecular weight crosslinkable polymer precursor, dispensing the solution into a mold and applying radiation, thereby forming a molded article having dye covalently bonded to

Serial Nr.: 10/620,783
Art Unit: 2873

03174-UPS

the polymer backbone. The dye essentially copolymerizes with the polymeric precursor. It is important to note that the polymer precursor (PVA) used in Lally et al. is a high molecular weight material. In the embodiments described, it has a weight average molecular weight of at least about 2000, about 10,000 to 300,000, or about 50,000 to 100,000 (col. 3, lines 58-64). As shown in FIG. 3 of Lally et al., the base material used by Lally et al. is a mixed long chain PVA oligomers with molecular weight greater than 2000. In contrast, the base material of this invention is a short chain low molecular weight hydrophilic compound with pendant hydroxyl and unsaturated vinyl groups.

The PVA oligomer used by Lally does not have reactive vinyl groups in the beginning. Therefore, a so-called polymer precursor functionalizer (col. 20, Example 2) is prepared first and then the functionalizer is reacted with the PVA oligomer to introduce the crosslinkable vinyl groups to the PVA molecules (col. 20, Example 3). The crosslinkable polymer precursor is then purified (col. 21, Example 4) and subsequently reacted with the activated dye (col. 21, Example 5). It can be seen that there are multiple procedures involved in preparing the crosslinkable PVA-DYE compounds. The instant invention, however, only comprises one major procedure, i.e., activating the dye in the aqueous alkaline solution and then adding the HEMA to react. The produced HEMA-DYE compound can be used directly to prepare tinted contact lens after a simple purification step.

Serial Nr.: 10/620,783
Art Unit: 2873

03174-UPS

From the above comparison between the instant invention and Lally et al., it is clear that the methodologies of preparing the reactive dye and the resultant tinted contact lens between the two inventions are totally different and involve different materials.

In the office action, the Examiner rejects claims 1 and 28 by citing that col. 8, lines 59 to col. 9 line 61 of Lally et al. teaches the first compound is a hydrophilic compound. Applicant respectfully contends that the rejection is unwarranted because the hydrophilic compound is only added in small proportions (up to 20%, preferably up to 5%) as the copolymer units that copolymerizes with the PVA to modify the properties of PVA as clearly stated in col. 9, lines 38-43. In other words, the added compound is not the main compound used to react with the DYE. The base compound of Lally et al. is the high molecular weight prepolymer or precursor which is totally different from the hydrophilic compound that constitutes the main base material of the instant invention to react with the dye.

In response to the office action, claims 1, 28 and 29 are amended to recite that the first compound comprises primarily a hydrophilic compound with pendant hydroxyl and unsaturated vinyl groups to distinguish with Lally et al. and to distinctly claim the subject matter of this invention. From the above discussion, applicant respectfully submits that claims 1, 28 and 29 should have overcome the rejection under 35 U.S.C. §102(b) and be patentable. By virtue of dependency, claims 2-27 and 30-32 should also be allowable.

Serial Nr.: 10/620,783
Art Unit: 2873

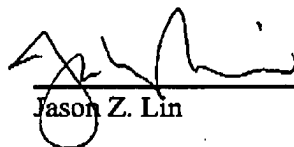
03174-UPS

Applicant also likes to point out that the molar ratio between the first compound and the second compound of this invention is very different from that of Lally et al. As claimed in claims 2, 7 and 11, the ratio used in the instant invention is from 1/1 to 5/1. The ratio of the compounds used in Lally et al. is a weight ratio 2~5% (col. 13, 21-22). This difference further evidences that Lally et al. neither disclose nor anticipate the instant invention.

With regard to the rejection of claims 4 and 9 over Lally et al. in view of Su et al., it should be noted that although Su et al. teach a method of making a reactive tinting compound in which the dye is Reactive Blue, the Reactive Blue is used to tint the already formed contact lens. The ideas and manufacturing processes are totally different from those claimed in the base claim 1. Applicant respectfully submits that the rejection of claims 4 and 9 should be withdrawn because the amended claim 1 should be allowable as discussed above.

From the foregoing discussion, it is clear that the instant invention differs from the cited prior arts. The physical difference results in different effects and is not obvious. The amended claims 1-32 are in full condition for allowance. The specification has been amended to correct a few editorial and grammatical errors. Prompt and favorable reconsideration of the application is respectfully solicited.

Respectfully submitted,



Jason Z. Lin

Serial Nr.: 10/620,783
Art Unit: 2873

03174-UPS

Agent for Applicant
Reg. No. 37,492
(408) 867-9757